4 DESIGN CONSTRAINTS

The following design constraints have been placed on the development of the NPPS.

- The NPPS database shall be an integrated database consisting of both personnel and payroll data. Common data elements between personnel and payroll shall be constructed such that redundant data entry shall not be required of the user.
- The NPPS database design shall facilitate the operation of NPPS at a single NASA site for all NASA sites.
- The design of the NPPS application system shall make maximum use of the existing NPPS Prototype.

The NPPS navigation method shall allow experienced users to bypass all remaining screens in a chained set of screens ("hot key") and continue normal processing as though the complete set of screens had been processed.

The NPPS shall use the following standard Program Function (PF) keys.

- PF1 requests help information from any process. NPPS shall restore the current screen contents upon exiting from help. Based upon the user's processing permissions for updating help data, NPPS shall provide the capability to modify or add additional help information associated with the current screen when this program function key is selected.
- PF3 terminates current processing and returns to the previous screen.
- PF5 terminates current processing and returns to the NPPS main menu (or parent menu of the current screen each time PF5 is depressed).
- PF7 retrieves and displays the previous screen for a continuation to the prior data display.
- PF8 retrieves and displays the next screen for a continuation of the prior data display.
- PF12 terminates current processing and exits NPPS to the operating system.

The NPPS shall provide the capability to add, change, or delete table data in support of the NPPS functions. NPPS shall provide a capability to browse a table's contents and optionally select any table record for maintenance.

Required input to the table maintenance process shall consist of (1) a user input table identification uniquely identifying the specific table to be retrieved, (2) the identification of the table record to be retrieved for maintenance (either by directly

identifying the key to the record or by selecting the key from the "browse" list), and (3) any user-supplied new or change data associated with the maintenance transaction.

The NPPS shall provide the following as part of table maintenance.

- Interactive displays for maintenance and browsing of the individual table
- Interactive error and information messages
- Immediate application of desired changes to the table
- An audit trail of all table changes, including an identification of who made the change as well as the date and time the change was made (User Name; refer to Table 3.1.1.3-1)
- A hardcopy transaction report (Table Action Report, Core Report 152; included in Appendix G)

The NPPS shall provide an interactive help facility. This facility shall provide for immediate access to the help information from any NPPS process, and the ability to maintain (add, change, or delete) help information directly by the user.

5 HARDWARE and SOFTWARE CONFIGURATION CONSTRAINTS

The NPPS shall be developed as a software product for agencywide installation in accordance with the NASA AIM standards. The following configuration is the standard AIM operating configuration. The NPPS shall be designed for operation under this configuration.

5.1 HARDWARE CONFIGURATION

The following system hardware configuration is the minimum AIM requirement according to NASA AIM standards.

- Central Processor - IBM 3090 Model 120 E or compatible with 32 megabytes memory
- Communication Processor - IBM 3725 or compatible
- Direct Access Storage Device - IBM 3380 or compatible
- Tape Drives - IBM 3420-8 or compatible

5.2 SYSTEM SOFTWARE CONFIGURATION

The following system software configuration is the minimum requirement according to the NASA AIM standards.

- Operating System Software - Vendor, IBM
  - Multiple Virtual Storage (MVS)
  - System Product (XA)
  - Job Entry System (JES) V2.R.2
- Database Management System - Vendor, Software AG
  - Adaptable Database (ADABAS) V4.R1
- Database Programming Language - Vendor, Software AG
  - NATURAL V2.R1.3
- Database Query Language - Vendor, Software AG
  - SUPER NATURAL V2.R1.2

- Database Application Tool - Vendor, Software AG
  - PREDICT V2.R2.3
- Database Security - Vendor, Software AG
  - NATURAL Security V2.R1.3
- Computer Security Software
  - Access Control Facility (ACF2) V5.R1 - Vendor, Computer Associates International; or
  - Remote Access Control Facility (RACF) V1.R8 - Vendor, IBM
- External Sort - DFSORT
- Data Communication Software - Vendor, IBM
  - Virtual Telecommunications Access Method (VTAM) V3.R1
  - Advanced Communications Facility/Systems Support Program (ACF/SSP) V3.R2
  - Advanced Communications Function/Network Control Program (ACF/NCP) V4.R1
- Teleprocessing Software - Vendor, IBM
  - Customer Information Control System (CICS) V2.R1
  - Time Sharing Option (TSO-E V1.R4)

6 PERFORMANCE GOALS

The NPPS is being developed for operation in a standard AIM computer configuration as defined under Section 5.0 of this specification. As a design performance goal, the NPPS shall process the average (single employee) online transaction in five seconds or less, exclusive of network transmission time.

7 INSTALLATION REQUIREMENTS

The NPPS shall be installed at the following NASA sites.

- Ames Research Center
- Goddard Space Flight Center
- Johnson Space Center
- Kennedy Space Center
- Langley Research Center
- Glenn Research Center
- Marshall Space Flight Center
- NASA Headquarters
- Stennis Space Center